Amendments to the Drawings:

The portable handheld work apparatus referred to in the applicants' disclosure was not shown so that a plan view of a portable handheld work apparatus in the form of a chain saw is included herein as FIG. 24. This FIG. 24 was taken from United States Patent 5,368,107 which is referred to in the applicants' disclosure on page 1, lines 4 and 5. The work apparatus is recited in the applicants' disclosure in the paragraph at page 6, starting on line 28. Accordingly, the disclosure is amended to insert appropriate reference numerals so as to conform the disclosure to the added FIG. 24.

Attachment: Additional Sheet (FIG. 24)

Remarks

Claims 2 to 10 and 12 to 16 are amended. Claims 17 to 19 are cancelled and claims 20 to 22 are added. Claims 2 to 10, 12 to 16 and 20 to 22 are pending in this application of which only claim 20 is in independent form.

Before discussing the rejections, applicants believe it will be helpful to first review their invention and added claims 20 to 22.

Claim 20 replaces claims 17 and 18 and is directed to a portable handheld work apparatus incorporating the antivibration unit. Up to now, the portable handheld work apparatus was referred to in the applicants' disclosure but was not shown in the drawings. Accordingly, applicants have added FIG. 24 which is taken from United States Patent 5,368,107 referred to on page 1, lines 4 and 5, of the applicants' disclosure. The applicants' disclosure in the paragraph starting at page 6, line 28, is supplemented herein to add appropriate reference numerals shown on FIG. 24. The brief description of the drawings has also been supplemented to make reference to FIG. 24.

Added claim 20 is directed to a portable handheld work apparatus having first and second housing parts with which the drive motor and the handle of the work apparatus, respectively, are connected. These features are described in the applicants' original disclosure as set forth in said paragraph starting on page 6, line 28.

The feature in accordance with which the antivibration unit

is so configured that the spring constant increases with increasing load and the deformation associated therewith is set forth on page 3, lines 9 to 14, of the applicants' disclosure. Here, it is also explained that this results in a good guiding characteristic of the work apparatus.

On page 6, line 29, to page 7, line 1, the applicants' disclosure describes that one end of the coil spring is fixed to the first housing part and a second end of the coil spring is fixed to the second housing part. On page 7, lines 1 to 4, the applicants' disclosure describes that the coil spring is fixed to the housing part via plugs and on page 5, lines 7 and 8, the coil spring is described as being held form tight in the slots of the plugs. The coil spring is then fixed to the housing part via the helically-shaped guide slot. It is possible that the plugs could also be formed on the housing parts.

Added claim 21 recites that the antivibration unit has a low spring constant in the unloaded state and a high spring constant when under load. This is described in the applicants' disclosure on page 1, lines 9 to 13. With respect to dependent claim 22, page 1, lines 26 to 29, describe that the turns of the transition section are moveable in the radial direction in the unloaded state of the antivibration unit relative to the helically-shaped guide slot and contribute to the spring action. The feature in accordance with which the coil spring in a first cross section of the coil spring has a first play with respect to the base of the guide slot and in accordance with which this first play increases to a second greater play in the course of a half turn of the coil spring is set forth on page 5, line 30, and continuing to page 6,

line 1.

On page 1, starting at line 29, and continuing to page 2, line 4, the applicants disclose the feature that with increasing load and the deformation resulting therefrom, continuously more turns of the coil spring come at least partially in contact engagement with the guide slot and the spring constant of the antivibration unit increases in correspondence to the increase of the play between the coil spring and base of the guide slot.

Added claim 20 is directed to a portable handheld work apparatus having a first housing part to which the drive motor of the work apparatus is connected and a second housing part to which a handle of the work apparatus is connected. The two housing parts are connected to each other by an antivibration unit. During the operation of the work apparatus, the drive motor drives the tool of the work apparatus which comes into engagement with a workpiece. In the motor-driven chain saw shown in FIG. 24, the tool is a saw chain and the workpiece is, for example, a tree log. The saw chain is supported on the first housing part wherein also the drive motor is mounted. As long as the tool is not in engagement with the workpiece, it is desirable that the operator be decoupled from the vibrations of the drive motor as best as is possible so that the operator is spared discomfort. As long as the tool is not in engagement with the workpiece, the antivibration unit is only slightly under load. As soon as the tool comes into engagement with the workpiece, it is desirable that the operator can act directly on the tool so that the tool can be well guided into the wood and, for example, a slippage of the tool can be avoided.

In the work apparatus, completely different characteristics of the antivibration unit are required depending upon the operating state. Known antivibration units make a compromise in this situation in that an average spring stiffness is selected therefor. However, neither an optimal protection of the operator against loads nor an optimal guidance performance of the tool during operation is achieved.

It is at this point where the applicants' invention steps in and provides a solution. Specifically, the antivibration unit is so configured that the spring constant increases with increasing load and the resulting deformation of the antivibration unit so that a good guidance performance of the work apparatus results. The art of record does not enable our person of ordinary skill to arrive at this design of the antivibration unit. Indeed, none of the references applied against the claims relate to a portable handheld work apparatus having an antivibration unit.

To achieve an antivibration unit whose spring constant increases with increasing load, the applicants' invention provides that the antivibration unit includes a coil spring which is fixed at one end to the first housing part of the work apparatus and the second end of the coil spring is fixed to the second housing part. The two housing parts are thereby connected to each other by the coil spring. The antivibration unit includes a guide slot on which an end section of the coil spring is fixed in order to connect the two housing parts to each other. In this way, the coil spring is fixed to the housing part via the guide slot. The guide slot thereby functions to fix the coil spring to the housing part. Accordingly, the coil spring is

fixed to the guide member via the end section thereof. A transition section of the coil spring extends from the end section and is guided on the guide slot in radial direction with play (b) to the base of the guide slot so that the turns in the transition section are moveable in the radial direction relative to the helically-shaped guide slot in the unloaded state of the antivibration unit and contributes to the spring action. The play between the coil spring and the base of the guide slot is overcome when the coil spring deforms under load in a direction perpendicular to the longitudinal axis of the coil spring. In this case, the turns of the coil spring in the transition section come into contact engagement, at least in part, with the guide slot and increase the spring stiffness of the antivibration unit. Accordingly, the guide slot functions to fix the coil spring as well as to change the spring stiffness of the antivibration unit thereby carrying out a dual function.

Having discussed the invention and the added claims, it is now appropriate to consider Clarke et al.

Independent claims 17 and 18 had been rejected under 35 USC 102(b) as being anticipated by Clarke et al. Claim 20 replaces claims 17 and 18 and the following will show that claim 20 patentably distinguishes the applicants' invention over this reference.

Clarke et al is directed to a coil spring per se. A portable handheld work apparatus is nowhere suggested in this reference. Also, there is no suggestion in this reference as to how the spring constant for an antivibration unit should be designed. Clarke et al only tells our person of ordinary skill

how a desired spring stiffness can be achieved in different load states for a loading of the spring in axial direction. Nowhere is there a suggestion as to which spring stiffness is advantageous for the antivibration unit in a portable handheld work apparatus.

On page 8 of the action, an end section of the spring of Clarke et al is shown. Here, the applicants note that the region identified as "end section" has a spacing to the guide slot. Accordingly, Clarke et al does not disclose an end section at which the coil spring is fixed to the helically-shaped guide slot so that the coil spring is fixed to the housing part via the guide slot. This feature is set forth in applicants' claim 20 with the clause:

> "said end section being fixed in said helically-shaped guide slot so that said coil spring is fixed to said first housing part;"

Clarke et al does not show how a coil spring could be fixed to a housing part. The flat surfaces provided at the two ends of the coil spring of Clarke et al indicate, however, that the coil spring of this reference is a pressure or compression spring which only lies against neighboring components and is not subjected to pull loads. Accordingly, a coil spring of the kind shown in Clarke et al is not suitable as part of an antivibration unit in a portable handheld work apparatus.

In Clarke et al, a change of the play takes place only in axial direction. However, in a portable handheld work apparatus, the deflection under load takes place in essentially a radial direction of the coil spring, that is, in a direction transverse

to the longitudinal axis of the coil spring. The adaptation of the spring stiffness via a rib having a changing thickness is not suitable to provide a handheld work apparatus having an antivibration unit with changeable spring constant that makes possible a good guiding performance of the work apparatus as well as a low loading with respect to the operator.

In the action, Clarke et al is characterized as showing the feature of the applicants' invention according to which the play between the coil spring and the base of the guide slot increases with increasing distance from the end section. This feature is embodied in applicants' claim 22. For this purpose, the Examiner, in the action, shows two different distances between the coil spring and the base of the guide slot in a single cross section of the spring wire of the coil spring and identifies the same as first and second play. The first play is between the coil spring and an average elevated region of the slot base and the "increased play" to an edge region of the slot.

Applicants call attention to the term "play" and note that it identifies the freedom of movement or the space therefor. A copy of page 913 of the Oxford Dictionary is submitted herewith. The term "play" then indicates path distance with which the coil spring is moveable relative to the slot base in radial direction to the longitudinal axis of the coil spring. In the figure presented on page 8 of the action, the coil spring can be moved in radial direction to the longitudinal axis by the path given as "first play (b)". A movement by this amount of the play (shown enlarged) is not possible because the coil spring would first bump against the center rise of the slot base with a movement in

radial direction. The distance identified on page 8 of the action with the term "increased play" is therefore no freedom of movement, that is, there is no play between the coil spring and the base of the slot.

In order to make the difference of the applicants' invention with respect to Clarke et al clearer, the feature is included in claim 22 according to which the play between the coil spring and the base of the guide slot increases in the unloaded state with increasing distance from the end section. This feature is set forth in claim 22 with the clause:

> "wherein said third play (b) between said coil spring and said base becomes greater with increasing distance from said end section when said antivibration unit is not under load;"

At a first cross section of the coil spring, the coil spring has a first play to the base of the guide slot and this first play increases in the course of a half turn of the coil spring to a second larger play (b'). This feature and limitation too is contained in claim 22 with the clause:

> "said first play distance increases to a greater second play distance (b') in the course of a further half turn..."

This makes clear that the first play and the second play are not to be measured in different regions of the slot at a location of the coil spring; instead, the moveability of the coil spring relative to the base of the slot changes in the course of the spring wire of the coil spring so that in the course of a half a turn of the coil spring, an increase of moveability results. In order to make this difference of the applicants' invention to

Clarke et al still clearer, claim 22 further recites that:

> "...so that with increasing load and the deformation of said coil spring associated therewith continuously more turns of said coil spring come into contact engagement with said helically-shaped guide slot and said spring constant of said coil spring increases in correspondence to the increase of said third play (b) between said coil spring and said base of said helically-shaped guide slot."

Because of the play (which increases in the course of half a turn) between the coil spring and the base of the guide slot, a continuous change of the spring constant of the antivibration unit results under load. This too is not shown or suggested in Clarke et al.

Added claim 21 recites the feature that:

> "said spring constant is low when said antivibration unit is not subjected to load and said spring constant is high when said antivibration unit is under load."

The above feature is nowhere suggested in Clarke et al or any of the other references applied against the claims.

In view of the foregoing, applicants submit that added claims 20 to 22 should now patentably distinguish the applicants' invention over Clarke et al and be allowable. Claims 2 to 10 and 12 to 16 are now all dependent directly or indirectly from claim 20 so that these claims too should now be allowable.

Reconsideration of this application is earnestly solicited.

Respectfully submitted,

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